IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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In re application of: Gregg E. SKOW   Group Art Unit: 2167

Serial No.:   10/627,492   Examiner: K. M. Lovel

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Filed: July 25, 2003   Confirmation No.: 4206

For: MULTIPLE SYSTEM COMPATIBLE DATABASE SYSTEM AND METHOD

15   Docket No.: H0003921 (002.0121)

Customer No.: 89955

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APPEAL BRIEF PURSUANT TO 37 C.F.R. § 41.37

Mail Stop Appeal Brief - Patents
25   Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

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      Appellant hereby submits its Appeal Brief in response to the rejection of the subject patent application.

      The Commissioner is hereby authorized to charge Ingrassia, Fisher & Lorenz, Deposit Account No. 50-2091, $540 for the filing of this Appeal Brief.

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I. Introduction

This is an Appeal Brief under 37 C.F.R. § 41.37 appealing the rejections set forth in the Office action dated November 11, 2007. Each of the topics required by 37 C.F.R. § 41.37 is presented in this Brief and is labeled appropriately.

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II. Real Party in Interest

Honeywell International, Inc. ("Honeywell") is the real party in interest of the present application. An assignment of all rights in the present application to Honeywell was executed by the inventors and recorded by the U.S. Patent and Trademark Office at

5 **Reel 014342, Frame 0163.**

III.   Related Appeals and Interferences

There are no appeals or interferences related to the present application of which Appellant is aware.

IV. Status of Claims

Claims 1, 6-15, 20-28, 37, and 42-49, which are presented in the Claims Appendix, are pending in the application. Each of Claims 1, 6-15, 20-28, 37, and 42-49 stand rejected, each of Claims 2-5, 16-19, 29-36, and 38-41 have been canceled.

5   Accordingly, the Appellant hereby appeals the final rejection of Claims 1, 6-15, 20-28, 37, and 42-49.

V. Status of Amendments

No amendments following the final Office action of November 16, 2009 have been filed.

VI. Summary of Claimed Subject Matter

The subject matter of independent Claim 1 relates to a program product that includes a database (110) and at least one physical computer-readable medium (112). The database (110) is compatible with multiple end-user systems (102-1, 102-2, 102-3 . .

5   . 102-N) and includes a data section (306) and a structure section (304) (pg. 6, ll. 18-30; pg. 8, ll. 4-9; FIG. 3). The data section (306) comprises a plurality of data tables (212-1, 202-2, 202-3 . . . 202-N)) that each include a plurality of data records (204-1, 204-2, 204-3 . . . 204-N) (pg. 8, ll. 6-9). Each data record has one or more features that affect its compatibility with one or more of the end-user systems (pg. 6, ll. 25-27; pg. 7, ll. 6-8).

10   Each data record also includes a feature field (206-2) that contains one or more feature bits representative of each of its features (pg. 7, ll. 8-14; FIG. 2). The structure section (304) comprises a plurality of feature mask tables (602-4) that each include a feature mask record (1004-1, 1004-2, 1004-3 . . . 1004-N) for each of the multiple end-user systems that use one or more of the data tables that include the data records having one or

15   more features (pg. 10, ll. 17-23; FIGS. 2, 3, 10). Each feature mask record includes one or more feature mask values that indicate whether a particular one of the data records is the one or more features of a data record are compatible with one or more of the end-user systems, and thereby indicate whether the data record is compatible with one or more of the end-user systems (pg. 7, ll. 21-27; pg. 10, l. 29-pg. 8, l. 6; FIGS. 2, 3, 10). The at

20   least one physical computer-readable medium has the database stored thereon (pg. 6, ll. 8-9; FIG. 1).

The subject matter of independent Claim 15 relates to a method of generating a database (110) that is compatible with multiple end-user systems (102-1, 102-2, 102-3, . . . 102-N), and includes the method comprising the steps of generating a data section (306) and storing a plurality of data records (204-1, 204-2, 204-3 . . . 204-N) in the data section

5   (pg. 8, ll. 6-9). Each data record includes a feature field (206-2), and one or more features is associated with each data record (pg. 6, ll. 25-29, pg. 7, ll. 6-8). Each feature field is with one or more feature bits that represent each of the features associated therewith (pg. 7, ll. 8-14; FIG. 2). The data section is divided into a plurality of data tables (201-1, 201-2, 201-3 . . . 201-N) that each include a plurality of the data records

10   (pg. 8, ll. 6-9). A data structure section (304) is generated that comprises a plurality of feature mask tables (602-4) that each include a feature mask record (1004-1, 1004-2, 1004-3 . . . 1004-N) for each of the end-user systems that use one or more of the data tables that include the data records having one or more features (pg. 10, ll. 17-23; FIGS. 2, 3, 10). One or more feature mask values are included, in each feature mask record,

15   that indicate whether a particular one of the stored data records is the one or more features of a data record are compatible with one or more of the end-user systems, to thereby indicate whether the data record is compatible with one or more of the end-user systems (pg. 7, ll. 21-27; pg. 10, l. 29-pg. 8, l. 6; FIGS. 2, 3, 10).

20   The subject matter of independent Claim 37 relates to a computer system (100) that includes a processor (104), memory (112) in operable communication with the processor, and a database (110). The database is stored in the memory (pg. 6, ll. 8-9), is compatible with multiple end-user systems (102-1, 102-2, 102-3, . . . 102-N) (pg. 6, ll.

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18-30), and includes a data section (306) and a structure section (304) (pg. 8, ll. 1-2; FIG. 3). The data section (306) comprises a plurality of data tables (212-1, 202-2, 202-3 . . . 202-N)) that each include a plurality of data records (204-1, 204-2, 204-3 . . . 204-N) (pg. 8, ll. 6-9). Each data record has one or more features that affect its compatibility with

5   one or more of the end-user systems (pg. 6, ll. 25-27; pg. 7, ll. 6-8). Each data record also includes a feature field (206-2) that contains one or more feature bits representative of each of its features (pg. 7, ll. 8-14; FIG. 2). The structure section (304) comprises a plurality of feature mask tables (602-4) that each include a feature mask record (1004-1, 1004-2, 1004-3 . . . 1004-N) for each of the multiple end-user systems that use one or

10   more of the data tables that include the data records having one or more features (pg. 10, ll. 17-23; FIGS. 2, 3, 10). Each feature mask record includes one or more feature mask values that indicate whether a particular one of the data records is the one or more features of a data record are compatible with one or more of the end-user systems, and thereby indicate whether the data record is compatible with one or more of the end-user

15   systems (pg. 7, ll. 21-27; pg. 10, l. 29-pg. 8, l. 6; FIGS. 2, 3, 10).

The subject matter of independent Claim 49 relates to a flight management system that includes memory (112), a navigation database (110), and a processor (104). The navigation database is stored in the memory (pg. 6, ll. 8-9), is compatible with

20   multiple flight management systems (pg. 6, ll. 18-30), and includes a data section (306) and a structure section (304) (pg. 8, ll. 1-2; FIG. 3). The data section (306) comprises a plurality of data tables (212-1, 202-2, 202-3 . . . 202-N)) that each include a plurality of navigational data records (204-1, 204-2, 204-3 . . . 204-N) (pg. 8, ll. 6-9). Each

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navigational data record has one or more features that affect its compatibility with one or more of the flight management systems (pg. 6, ll. 25-27; pg. 7, ll. 6-8). Each data record also includes a feature field (206-2) that contains one or more feature bits representative of each of its features (pg. 7, ll. 8-14; FIG. 2). The structure section (304) comprises a

5   plurality of feature mask tables (602-4) that each include a feature mask record (1004-1, 1004-2, 1004-3 . . . 1004-N) for each of the multiple end-user systems that use one or more of the data tables that include the data records having one or more features (pg. 10, ll. 17-23; FIGS. 2, 3, 10). Each feature mask record includes one or more feature mask values that indicate whether the one or more features of a navigational data record are

10   compatible with one or more of the flight management systems, and thereby indicate whether the data record is compatible with one or more of the flight management systems (pg. 7, ll. 21-27; pg. 10, l. 29-pg. 8, l. 6; FIGS. 2, 3, 10). The processor is configured to generate an aircraft flight plan based at least in part on the navigational data stored in the navigation database (pg. 1, ll. 13-25; pg. 23, ll. 9-10).

VII.   Grounds of Rejection to be Reviewed on Appeal

The grounds of rejection to be reviewed in this appeal are as follows:

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    1.   Whether Claims 1, 6, 7, 11, 15, 20, 21, 25, 37, 42, 43, and 47 are

unpatentable under 35 U.S.C. § 103 over U.S. Patent Nos. 6,804,664 (Hartman et al.),

5,710,915 (McElhiney)

    2.   Whether Claims 8-10, 12-14, 22-24, 26-28, and 44-48 are unpatentable

under 35 U.S.C. § 103 over, Hartman et al., McElhiney, and U.S. Patent No. 5,201,046

10   (Goldberg et al.).

    3.   Whether Claim 49 is unpatentable under 35 U.S.C. § 103 over, Hartman et

al., McElhiney, Goldberg et al. and U.S. Patent No. 6,134,500 (Tang et al.).

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VIII. Arguments

I. CLAIMS 1, 6, 7, 11, 15, 20, 21, 25, 37, 42, 43, AND 47 ARE NOT

UNPATENTABLE UNDER 35 U.S.C. § 103 OVER HARTMAN ET AL.

AND McELHINEY

A. Hartman et al.

Hartman et al. relates to a database that is structured to enable faster, more

efficient queries. To do so, the data to be stored in the database is characterized as a

number of questions, and each record in the database comprises bit map groups that

correspond to the answers to the questions. The answers may be binary attributes, range

attributes, and string attributes, depending on the question type. With this type of

structure, database queries are obtained by simple bit-wise Boolean operations of the

records in the database, beginning first with binary attribute matching, then range

attribute matching, and finally string attribute matching. With each attribute matching

operation, various of the records in the database are eliminated from the query, thus

making the query more efficient (col. 8, l. 9 through col. 12, l. 11).

B. McElhiney

McElhiney relates to a system and method to easily store and manipulate data in a

relational database system, preferably by implementing what is referred to as "transitive

closures" (col. 3, l. 63 through col. 4, l. 42). McElhiney discloses, in the Abstract, a

database management system (DBMS) that stores, retrieves, and manipulates directed

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graph data structures in a relational database. Data are stored in a database in the form of two dimensional tables, which are referred to as flat files. The DBMS defines a schema for each table in the database. The schema defines the name and data type of each column in a database table. Tables that are used to store directed graph data structures

5   include at least one column defined as having a reference data type. Non-empty entries in that column are pointers to rows in a specified table. Directed graph data structures are stored in specified tables by storing each record of the directed graph in a distinct row of one of the specified tables, with references corresponding to interconnections between records being stored in reference data type columns. Portions of a directed graph are

10   retrieved from the specified table, in accordance with a single specified query and then the query is automatically expanded by also retrieving additional portions of the tables which are referenced by the previously retrieved portions, thereby performing a transitive closure. The retrieved data is stored in a buffer as a list of rows, and then communicated to an application process. An interface program converts the list of rows stored in the

15   buffer into a directed graph data structure.

              C.   The Final Office Action

              The final Office action alleges that Hartman et al. discloses a database that is compatible with multiple end-user systems. The Office action further alleges that the

20   content database of Hartman et al. corresponds, at least generally, to the data section of independent Claims 1, 15, 37, and 49 of the instant application, and cites col. 4, ll. 35-46, col. 6, ll. 19-24, and col. 7, ll. 39-48 to support this allegation. The Office action also alleges that Hartman et al. discloses, at least generally, the structure section of

independent Claims 1, 15, 37, and 49 of the instant application, and cites col. 6, ll. 25-38, col. 7, ll. 16-26, and col. 8, ll. 9-18 and 54-64 to support this allegation. The Office action then goes on to opine that the only deficiency of Hartman et al. is that it does not disclose that the data section and the structure section each comprise a plurality of tables.

5   To make up for the allegedly sole lacuna of Hartman et al., the Office action cites McElhiney. Specifically, the Office action cites col. 7, ll. 49-58 of McElhiney as disclosing "the partitioning of a data table into a plurality of tables." The Office action then goes on to conclude that it would have been obvious "to partition the data section and the structure sections of Hartman into a plurality of tables . . . to provide parallel

10   access to the tables which accelerates access." Office action at 4-5. As will now be explained, the analysis proffered in the Office action is inaccurate, in that Hartman et al. does not disclose all that is alleged in the Office action. Furthermore, the combination of Hartman et al. and McElhiney does not establish a prima facie case of obviousness.

15   D.   Analysis

The Examiner bears the initial burden of establishing a *prima facie* case of obviousness. In re Fine, 837 F.2d 1071, 1074 (Fed. Cir. 1988). As such, the Examiner has the burden of setting forth a detailed evidentiary basis for the teaching, suggestion or motivation to combine the cited references. Indeed, as the Supreme Court recently

20   reiterated, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." KSR International Co. v. Teleflex Inc., 127 S. Ct. 1727, 1741 (2007). The mere allegation that references *can* be combined or modified does not render the

alleged combination obvious unless the result would have been predictable to the ordinarily skilled artisan. Id.

A claim cannot be found *prima facie* obvious unless all of the claim elements are either taught or suggested in the cited art or form part of the knowledge of one of

5   ordinary skill in the art, or all of claim elements are obvious from the nature of the problem itself. In re Dembiczak, 175 F.3d 994, 999 (Fed. Cir. 1999) (emphasis added); In re Wilson, 424 F.2d 1382, 1385 (C.C.P.A. 1970) ("All words in a claim must be considered in judging the patentability of that claim against the prior art."). The Board of Patent Appeal and Interferences recently confirmed this principle, stating that a proper

10   obviousness determination requires "a searching comparison of the claimed invention – *including all its limitations* – with the teaching of the prior art." See In re Wada and Murphy, Appeal 2007-3733, *citing In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995) (emphasis in original). Further, the necessary presence of all claim features is axiomatic, since the Supreme Court has long held that obviousness is a question of law based on

15   underlying factual inquiries, including ascertaining the differences between *the claimed invention* and the prior art. Graham v. John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966) (emphasis added).

In sum, it remains well-settled law that obviousness requires at least a suggestion of all of the features in a claim. See In re Wada and Murphy, citing CFMT, Inc. v.

20   Yieldup Intern. Corp., 349 F.3d 1333, 1342 (Fed. Cir. 2003) and In re Royka, 490 F.2d 981, 985 (CCPA 1974)).

Moreover, it is well-settled that, in order to avoid succumbing to the temptation of reliance on hindsight, the teaching or suggestion to make the claimed combination must

not be found in an applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438

(Fed. Cir. 1991). Although it is recognized that any determination of obviousness is, in a

sense, based on hindsight reasoning, if the determination does not take into account only

knowledge within the level of ordinary skill in the art at the time the claimed invention

5   was made, but relies on knowledge gleaned only from an applicant's own disclosure, then

hindsight has been impermissibly applied. In re McLaughlin, 443 F.2d 1392, 1395, 170

USPQ 209, 212 (CCPA 1971).

Appellant submits that the Examiner has not met her burden in establishing a

prima facie case of obviousness because the prior art does not objectively teach or

10   suggest all of the recited claim elements, nor are all of the recited claim elements obvious

from the nature of the problem itself. As such, it is submitted that the Examiner is

unwittingly relying on impermissible hindsight reasoning.

1.   Hartman et al. Does Not Disclose the Claimed Data Section

15   As was noted above, the Office action alleges that that the content databases (150,

151, 152) of Hartman et al. correspond to the claimed data section. The Office action

references col. 4, ll. 35-46, col. 6, ll. 19-24, and col. 7, ll. 39-48 to support this allegation.

Interestingly, if one reviews the above-noted portions of Hartman et al., it is

readily apparent that these portions do not even remotely address the content databases

20   (150, 151, 152). More significantly, however, according to the independent claims of the

instant application: (1) each data table that comprises the data section includes a plurality

of *data records that each have one or more features that affect its compatibility with one*

or more of the end-user systems, and (2) *each data record includes a feature field that*

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contains one or more feature bits representative of each of its features. Although

Hartman et al. discloses looking up fields in the correlation table and retrieving bitmasks

for the attributes corresponding to the fields, nowhere does Hartman et al. disclose, in

those portions referenced in the final Office action or any other portion, data records

5 having one or more features that affect **compatibility with one or more of end-user**

systems or **data records that include a feature field that contains one or more feature**

bits representative of each of its features.

In the Response to Arguments section of the final Office action, the Examiner

attempts to rebut the above argument by alleging that col. 6, ll. 25-38 of Hartman et al.

10 discloses that the user profile database stores information regarding users and about client

devices, and that that col. 5, ll. 3-14 and 25-33 disclose that a binary attribute is compared

to the profile. Based on this, the Examiner makes the conclusory statement that because

"the profile information can be device information, the records can be filtered based on

compatibility." This statement is erroneous, and thus so is the conclusion.

15 First of all, the allegation that Hartman et al. discloses that the profile information

"can be" device information mischaracterizes what is actually disclosed. If Hartman et

al. did provide such a teaching, this *might* lead one to conclude that, at least in some

embodiments, Hartman et al. contemplated the profile information including only device

information.[1] However, what col. 6, ll. 25-38 actually states is:

20 "Information about the client devices used by each user, such as type of
device and processing capabilities, may also be obtained and stored in the user
profile database 140 or another database."

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[1] Applicants, of course, do not concede this as an admission of a finding of fact.

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Thus, what is actually disclosed is that the profile information may additionally include device information, and not that profile information, in its entirety, may <u>be</u> device information.

Secondly, although Hartman et al. does disclose storing user profile data and

5 client profile data, and that user profiles may refer to client profiles, and vice-versa, the reason for doing so is because multiple users may use a particular client, and a particular user may use multiple clients. This has nothing whatsoever to do with data records having features that affect the compatibility of a data record with an end-user system. Rather, this deals with whether a user, via a specific client, may access certain data. As

10 has been stated repeatedly during the prosecution of this application, accessibility to data by a device or system, and compatibility of data with a device or system, are completely different issues. It is the former at which, at best, Hartman et al. even hints.

Applicants submit that the Examiner is conflating, within the paradigm of the claimed technology, the plain and ordinary meanings of "compatibility" and

15 "accessibility." Specifically, the plain and ordinary definition for compatibility, in the context of the claimed invention, is: (of software) capable of being run on another computer without change.[2] According to the same source,[3] accessibility has the following common meanings: (1) easy to approach, reach, enter, speak with, or use; (2) that can be used, entered, reached, etc.; (3) obtainable; attainable; and (4) open to the

20 influence of (usually fol. by *to*). In the context of Hartman et al., either the second

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[1] Institute of Electrical and Electronics Engineers (IEEE): Dictionary.com, "compatibility," in *Dictionary.com Unabridged.* Source location: Random House, Inc. Available: http://dictionary.reference.com. Accessed: February 12, 2010.

[2] Dictionary.com, "accessibility," in *Dictionary.com Unabridged.* Source location: Random House, Inc. Available: http://dictionary.reference.com. Accessed: February 12, 2010.

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definition (that can be used, entered, reached, etc.) or the third definition (obtainable; attainable) fit, as it refers to the ability to use, reach, or obtain data.

2. Hartman et al. Does Not Disclose the Claimed Structure Section

5   The final Office action also alleges that Hartman et al. discloses a structure section. The Office action references col. 6, ll. 25-38, col. 7, ll. 16-26, and col. 8, ll. 9-18 and 54-64 to support this allegation.

According to each of the independent claims: (1) each feature mask table that comprises the structure section includes a feature mask record for each of the multiple

10   end-user systems that use one or more of the data tables that include the data records having one or more features, and (2) *each feature mask record includes one or more feature mask values that indicate whether the one or more features of a data record are compatible with one or more of the end-user systems, and thereby indicate whether the data record is compatible with one or more of the end-user systems.*

15   In the final Office action, the Examiner alleges that the content of each feature mask record, as delineated above, is disclosed at col. 8, ll. 9-18 and ll. 54-61 of Hartman et al. Appellant notes that col. 8, ll. 9-18 of Hartman et al. states:

"As described below, the method of querying a database is a reductive process. In a typical database query, the fields of each record of the database is
20   compared in turn against the query. If the fields of a record match the query, then the record is added to a list of matching records. A typical database query is therefore an additive process. According to the invention, a query is structured to benefit from how the data is stored (as described above), and how a query may be best processed. The present invention may also be considered a successive
25   filtering process.";

and col. 8, ll. 54-61 states:

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"In the binary attribute matching step (step 340), the binary attributes of
the query profile are matched against the binary attributes in the query database.
For example, if the query profile is based upon a user profile from the user profile
database 140, then the query profile would be matched against the content profiles
in the content profile database 150. Matching may be accomplished through
binary operations, such as logical AND."

Appellant submits that neither of these sections of Hartman et al. (nor any other

portion, for that matter) disclose, or even remotely suggest, that each feature mask record

in a feature mask table includes one or more feature mask values that indicate whether

the one or more features of a data record are compatible with one or more of the end-user

systems, and thereby indicate whether the data record is compatible with one or more of

the end-user systems.

Appellant also notes that the Examiner failed to address the above argument in the

final Office action. It is submitted that this is because the argument cannot be rebutted.

3.   McElhiney Does Not Disclose or Suggest All That is Alleged

McElhiney was cited in the final Office action for allegedly disclosing, at col. 7,

ll. 49-58, the "partitioning of a data table into a plurality of tables." Final Office action at

4. This portion of McElhiney states:

"After building the database structure, records are added to the search and detail
tables of the database. As records are inserted, the system tests to determine if the number
of records exceeds a predetermined threshold number, for example 50,000 records. When
this threshold is exceeded, both the search and detail tables are partitioned, i.e. split into
two sub-tables each. This threshold is tunable, based upon the size of the database and the
size and number of disks in the computer system. When possible, the two sub-tables are
placed on separate physical storage devices."

It is quite clear from the above that McElhiney merely discloses storing data in a

database in the form of two-dimensional tables, and splitting each of the tables into sub-

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tables if the number of records exceeds some threshold. This is wholly disparate from

providing data sections and structure sections that comprise a plurality of data tables and

feature mask tables, respectively. Nonetheless, even if one were to concede that

McElhiney discloses what the Office action alleges,[4] it does not make up for the rather

5   glaring deficiencies of Hartman et al. with respect to the independent claims.

4.   The Independent Claims are Not Obvious

In view of the foregoing, Appellant submits that the combination of Hartman et

al. and McElhiney does not, and indeed cannot, establish a *prima facie* case of

10   obviousness of any one of independent Claims 1, 15, 37, or 49. This is because the

alleged combination of references fails to disclose each and every element recited in

these claims. As such, there can be no teaching, suggestion, or motivation that would

have led one of ordinary skill to combine these reference teachings to arrive at the

claimed invention.

15   Moreover, the Examiner has not provided a factual basis or articulated reasoning

that the inventions encompassed by the independent claims have resulted from: (1)

combining prior art elements according to known methods to yield predictable results; (2)

a simple substitution of one known element for another to obtain predictable results; (3)

using a known technique to improve similar devices (methods, or products) in the same

20   way; (4) applying a known technique to a known device (method, or product) ready for

improvement to yield predictable results; (5) choosing from a finite number of identified,

predictable solutions, with a reasonable expectation of success (e.g., "obvious-to-try); or

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[4] Applicants, of course, do not concede this point.

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(6) known work in one field of endeavor that prompted variations of it for use based on

design incentives or other market forces if the variations are predictable to one of

ordinary skill in the art.

5   5.   The Dependent Claims Are Also Not Obvious

Because independent Claims 1, 15, and 37 are not obvious, then dependent

Claims 6, 7, 11, 20, 21, 25, 42, 43, and 47 are also believed not obvious. In re Fine,

supra. However, as will now be explained, the features recited in each of these

dependent claims is also not disclosed or suggested by Hartman et al. and McElhiney.

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a.   Dependent Claims 6, 20, and 42

Dependent Claims 6, 20, and 42 each recite that the structure section further

comprises a system identification table that includes data that uniquely identifies each of

the end-user systems. The final Office action cites col. 6, ll. 25-38 and col. 7, ll. 16-26 of

15   Hartman et al. as allegedly disclosing this feature. As noted above, col. 6, ll. 25-38

states:

> "Information about the client devices used by each user, such as type of
> device and processing capabilities, may also be obtained and stored in the user
> profile database 140 or another database."

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Moreover, col. 7, ll. 16-26 states:

> "The client profile database 170 stores and provides profiles of client
> devices 100. Client profiles may include such information a software versions,
> processor type, processor speed, memory size, modem type, etc. The client profile
> database 170 is related to the user profile database 140, in that the profiles of
25   client devices 100 used by the users are stored in the client profile database 170.
> User profiles may refer to client profiles, and client profiles may refer to user

profiles. This is because a given client may be used by multiple users, and a given user may use multiple client devices."

Although the client profile database of Hartman et al. may include profiles of

5   client devices, there is no teaching or suggestion of including such information in a

separate system identification table with a structure section. Moreover, this data may not

"uniquely identify" each client device, since one or more users may have substantially

identical client devices (e.g., software versions, processor type, processor speed, memory

size, modem type, etc.).

10   For at least this additional reason, dependent Claims 6, 20, and 42 are not

obvious.

b.   Dependent Claims 7, 21, and 43

Dependent Claims 7, 21, and 43 recite that the system identification table

15   comprises a plurality of system identification records, and that each system identification

record is associated with each of the end-user systems. The final Office action again cites

col. 6, ll. 25-38 and col. 7, ll. 16-26 of Hartman et al. as allegedly disclosing this feature.

As may be readily apparent from the reproductions of these sections above, Hartman et

al. does not disclose, or even remotely suggest, this additional feature.

20   For at least this additional reason, dependent Claims 7, 21, and 43 are not

obvious.

c.   Dependent Claims 11, 25, and 47

Dependent Claims 11, 25, and 47 recite that each data record includes a plurality of fields in addition to the feature field, and that the structure section further comprises a field definition table that includes at least data representative of each of the data record

5   fields. The final Office action cites col. 7, ll. 36-38 and col. 4, ll. 35-46 of Hartman et al. as allegedly disclosing the former feature, and col. 7, ll. 39-42 as allegedly disclosing the latter feature.

Col. 4, ll. 35-46 of Hartman et al. merely discloses that the database is built from records, profiles, targets, and attributes, and also defines each of these terms. At col. 7, ll.

10   36-42, Hartman et al. discloses that when fields correspond to binary attributes, the database server looks up the fields in the correlation table and retrieves the bitmask for the binary attributes corresponding to the field. For range attributes and string attributes, some processing may be conducted prior to storing, and the retrieved bitmask, plus the values of the range attributes and string attributes, form one or more profiles of the

15   record.

Appellant submits that these sections of Hartman et al. do not disclose, or even remotely suggest, the additional features recited in dependent Claims 11, 25, and 47, and for at least this additional reason these claims are not obvious.

II.   CLAIMS 8-10, 12-14, 22-24, 26-28, AND 44-48 ARE NOT

UNPATENTABLE UNDER 35 U.S.C. § 103 OVER HARTMAN ET

AL., McELHINEY, AND GOLDBERG ET AL.

5   A.   Hartman et al. and McElhiney

These references were described above, and the descriptions thereof will not be

repeated.

        B.   Goldberg et al.

10   Goldberg et al. relates to a database management system and method for storing,

retrieving, and manipulating directed graph data structures in a relational database.

        C.   Dependent Claims 8, 22, and 44

Dependent Claims 8, 22, and 44 each recite that the data section comprises a

15 plurality of data tables that each include a plurality of the data records, and that the

structure section further comprises a table pointer table that includes data that uniquely

describes at least each of the data tables. The Examiner, in the final Office action,

concedes that neither Hartman et al. nor McElhiney disclose or suggest this feature, but

alleges that Goldberg et al., at col. 14, ll. 31-54, does disclose this feature.

20   The above-cited section of Goldberg et al. discloses a technique to avoid storing

duplicate copies of rows or records, either while retrieving data from the database or

storing a directed graph for transportation to the database. According to the disclosed

technique, for each row that is stored in a buffer, an entry is made in a hash table that

contains various data. These data include a unique row or record identifier, a pointer to the corresponding table definition in a table definition section of the buffer, a pointer to the row as stored in the fixed format data section of the buffer, and a link field for sequentially accessing all entries in the hash table in the same order that the entries were

5   added to the hash table. Before storing each row or record in the buffer, the hash table is checked to see if there is already an entry for that row or record.

Appellant submits that this section of Goldberg et al. fails to disclose or even remotely suggest at least the additional features of dependent Claims 8, 22, and 44, let alone cure the deficiencies of Hartman et al. and McElhiney with respect to the claims

10   from which these claims depend. For at least this additional reason these dependent claims are not obvious.

D.   Dependent Claims 9, 23, and 45

Dependent Claims 9, 23, and 45 each recite that the table pointer table comprises

15   a plurality of table pointer records, and that at least one table pointer record is associated with each of the data tables. The Examiner, in the final Office action, concedes that neither Hartman et al. nor McElhiney disclose or suggest this feature, but alleges that Goldberg et al., at col. 14, ll. 31-54, does disclose this feature.

The above-cited section of Goldberg et al. was summarized above, and Appellant

20   submits that this section of Goldberg et al. fails to disclose or even remotely suggest at least the additional features of dependent Claims 9, 23, and 45, let alone cure the deficiencies of Hartman et al. and McElhiney with respect to the claims from which these claims depend. For at least this additional reason these dependent claims are not obvious.

E. Dependent Claims 10, 24, and 46

Dependent Claims 10, 24, and 46 each recite that each table pointer record includes data representative of at least a location of the associated data table, a number of the data records in the associated table, and a size of each data record in the associated

5   data table. The Examiner concedes that neither Hartman et al. nor McElhiney disclose or suggest this feature, but again alleges that Goldberg et al., at col. 14, ll. 31-54, does disclose this feature.

The above-cited section of Goldberg et al. was summarized above, and Appellant submits that this section of Goldberg et al. fails to disclose or even remotely suggest at

10   least the additional features of dependent Claims 10, 24, and 46, let alone cure the deficiencies of Hartman et al. and McElhiney with respect to the claims from which these claims depend. For at least this additional reason these dependent claims are not obvious.

F. Dependent Claims 12, 26, and 48

15   Dependent Claims 12, 26, and 48 each recite that the structure section further comprises one or more return type tables that each include data representative of a format of each of the data record fields. The Examiner, in the final Office action, concedes that neither Hartman et al. nor McElhiney disclose or suggest this feature, but alleges that Goldberg et al., at col. 6, ll. 33-41, col. 11, ll. 37-59, and col. 13, ll. 51-62, does disclose

20   this feature.

The above-cited sections of Goldberg et al. discloses the definition of DATA TYPE (col. 6, ll. 33-41), describes the schema for a table (col. 11, ll. 37-59), and describes the table definition section (col. 13, ll. 51-62). Appellant submits that these

sections of Goldberg et al. fail to disclose or even remotely suggest at least the additional features of dependent Claims 12, 26, and 48, let alone cure the deficiencies of Hartman et al. and McElhiney with respect to the claims from which these claims depend. For at least this additional reason these dependent claims are not obvious.

5

G.   Dependent Claims 13 and 27

Dependent Claims 13 and 27 each recite a header section that includes data representative of indicia that is used to identify the database. The Examiner concedes that neither Hartman et al. nor McElhiney disclose or suggest this feature, but again

10   alleges that Goldberg et al., at col. 6, ll. 33-41, col. 11, ll. 37-59, and col. 13, ll. 51-62, does disclose this feature.

The above-cited sections of Goldberg et al. were summarized above, and Appellant submits that these sections of Goldberg et al. fail to disclose or even remotely suggest at least the additional features of dependent Claims 13 and 27, let alone cure the

15   deficiencies of Hartman et al. and McElhiney with respect to the claims from which these claims depend. For at least this additional reason these dependent claims are not obvious.

H.   Dependent Claims 14 and 28

Dependent Claims 14 and 28 each recite that the header section further includes

20   data representative of a location of the structure section. The Examiner concedes that neither Hartman et al. nor McElhiney disclose or suggest this feature, but again alleges that Goldberg et al., at col. 6, ll. 33-41, col. 11, ll. 37-59, and col. 13, ll. 51-62, does disclose this feature.

The above-cited sections of Goldberg et al. were summarized above, and

Appellant submits that these sections of Goldberg et al. fail to disclose or even remotely

suggest at least the additional features of dependent Claims 14 and 28, let alone cure the

deficiencies of Hartman et al. and McElhiney with respect to the claims from which these

5   claims depend. For at least this additional reason these dependent claims are not obvious.

III.   CLAIM 49 IS NOT UNPATENTABLE UNDER 35 U.S.C. § 103 OVER

HARTMAN ET AL., McELHINEY, GOLDBERG ET AL., AND TANG

ET AL.

A.   Hartman et al., McElhiney, and Goldberg et al.

These references were described above, and the descriptions thereof will not be

repeated.

B.   Tang et al.

Tang et al. relates to a system and method for generating a minimum-cost airline

flight plan from a point of origin through a set of fix points to a destination point.

C.   Analysis

Independent Claim 49 is commensurate in scope with the other independent, but

is narrowly recited to the context of a flight management system and specifies navigation

data. As noted above, none of Hartman et al., McElhiney, or Goldberg et al., either alone

or in combination, is understood to disclose or suggest all of the features recited in any of

the independent claims. Moreover, without conceding that Tang et al. discloses or

suggests what the examiner alleges in the final Office action, upon review of this

reference, Appellant submits that it also fails to disclose or suggest all of these features.

In view of the foregoing, Appellant submits that the combination of Hartman et

al., McElhiney, Goldberg et al., and Tang et al. fails to establish a *prima facie* case of

obviousness of independent Claim 49.

IX.   Conclusion

In view of the foregoing, Appellant submits that the rejections of Claims 1, 6-15, 20-28, 37, and 42-49 are improper and should not be sustained. Therefore, a reversal of the rejections in the final Office action dated November 16, 2009, is respectfully

5   requested.

Respectfully submitted,

10

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X. CLAIMS APPENDIX

Claims on Appeal

1.   A program product, comprising:

5   a) a database that is compatible with multiple end-user systems, the database

comprising:

a data section comprising a plurality of data tables, each data table including a

plurality of data records that each have one or more features that affect its compatibility

with one or more of the end-user systems, each data record including a feature field that

10   contains one or more feature bits representative of each of its features; and

a structure section comprising a plurality of feature mask tables, each feature

mask table including data a feature mask record for each of the multiple end-user systems

that use one or more of the data tables that include the data records having one or more

features, each feature mask record including one or more feature mask values that

15   indicate whether the one or more features of a data record are compatible with one or

more of the end-user systems, and thereby indicate whether the data record is compatible

with one or more of the end-user systems;

and

b) at least one physical computer-readable medium having said database stored

20   thereon.

2-5 (canceled).

31

6. The program product of Claim 1, wherein the structure section further comprises a system identification table that includes data that uniquely identifies each of the end-user systems.

5   7. The program product of Claim 6, wherein the system identification table comprises a plurality of system identification records, each system identification record associated with each of the end-user systems.

8. The program product of Claim 1, wherein:

10   the data section comprises a plurality of data tables, each data table including a plurality of the data records; and

the structure section further comprises a table pointer table that includes data that uniquely describes at least each of the data tables.

15   9. The program product of Claim 8, wherein:

the table pointer table comprises a plurality of table pointer records; and

at least one table pointer record is associated with each of the data tables.

10. The program product of Claim 9, wherein each table pointer record

20   includes data representative of at least:

a location of the associated data table;

a number of the data records in the associated table; and

a size of each data record in the associated data table.

11.   The program product of Claim 1, wherein:

each data record includes a plurality of fields in addition to the feature field; and

the structure section further comprises a field definition table that includes at least

5   data representative of each of the data record fields.

12.   The program product of Claim 11, wherein the structure section further

comprises one or more return type tables, each return type table including data

representative of a format of each of the data record fields.

10

13.   The program product of Claim 1, further comprising:

a header section that includes data representative of indicia that is used to identify

the database.

15   14.   The program product of Claim 13, wherein the header section further

includes data representative of a location of the structure section.

15.   A method of generating a database that is compatible with multiple end-

user systems, the method comprising the steps of:

20   generating a data section;

storing a plurality of data records in the data section, each data record including a

feature field;

associating one or more features with each data record;

33

supplying each feature field with one or more feature bits that represent each of the features associated therewith;

dividing the data section into a plurality of data tables that each include a plurality of the data records;

5   generating a structure section that comprises a plurality of feature mask tables, each feature mask table including a feature mask record for each of the end-user systems that use one or more of the data tables that include the data records having one or more features; and

including one or more feature mask values, in each feature mask record, that

10   indicate whether the one or more features of a data record are compatible with one or more of the end-user systems, to thereby indicate whether the data record is compatible with one or more of the end-user systems.

16-19 (canceled).

15

20.   The method of Claim 15, further comprising:

generating a system identification table that includes data that uniquely identifies each of the end-user systems.

20   21   The method of Claim 20, further comprising:

including a plurality of system identification records in the system identification table, each system identification record associated with each of the end-user systems.

22.   The method of Claim 15, further comprising:

dividing the data section into a plurality of data tables that each include a plurality

of the data records; and

generating a table pointer table that includes data that uniquely describes at least

5   each of the data tables.

23.   The method of Claim 22 further comprising:

including a plurality of table pointer records in the table pointer table, at least one

table pointer record is associated with each of the data tables.

10

24.   The method of Claim 23, further comprising:

supplying each table pointer record with data representative of at least (i) a

location of the associated data table, (ii) a number of the data records in the associated

table and (iii) a size of each data record in the associated data table.

15

25.   The method of Claim 15, further comprising:

including a plurality of fields, in addition to the feature field, in each data record;

and

generating a field definition table that includes at least data representative of each

20   of the data record fields.

26.   The method of Claim 25, further comprising:

generating one or more return type tables, each return type table including data representative of a format of each of the data record fields.

27.   The method of Claim 15, further comprising:

generating a structure section and including the feature mask therein;

generating a header section; and

supplying the header section with data representative of indicia that is used to identify the database.

28.   The method of Claim 27, wherein the header section further includes data representative of a location of the structure section.

29-36 (canceled).

37.   A computer system, comprising:

a processor;

memory in operable communication with the processor; and

a database stored in the memory, the database compatible with multiple end-user systems and including:

a data section comprising a plurality of data tables, each data table including a plurality of data records that each have one or more features that affect its compatibility

with one or more of the end-user systems, each data record including a feature field that

contains one or more feature bits representative of each of its features, and

a structure section that includes a comprising a plurality of feature mask tables,

the each feature mask table including data a feature mask record for each of the multiple

5   end-user systems that use one or more of the data tables that include the data records

having one or more features, each feature mask record including one or more feature

mask values that indicate whether a particular one of the data records is the one or more

features of a data record are compatible with one or more of the end-user systems, and

thereby indicate whether the data record is compatible with one or more of the end-user

10   systems.

38-41 (canceled).

42.   The system of Claim 37, wherein the structure section further comprises a

15   system identification table that includes data that uniquely identifies each of the end-user

systems.

43.   The system of Claim 42, wherein the system identification table comprises

a plurality of system identification records, each system identification record associated

20   with each of the end-user systems.

44.   The system of Claim 37, wherein:

the data section comprises a plurality of data tables, each data table including a

plurality of the data records; and

t   he structure section further comprises a table pointer table that includes data that

5   uniquely describes at least each of the data tables.

45.   The system of Claim 44, wherein:

the table pointer table comprises a plurality of table pointer records; and

at least one table pointer record is associated with each of the data tables.

10

46.   The system of Claim 45, wherein each table pointer record includes data

representative of at least:

a location of the associated data table;

a number of the data records in the associated table; and

15   a size of each data record in the associated data table.

47.   The database of Claim 37, wherein:

each data record includes a plurality of fields in addition to the feature field; and

the structure section further comprises a field definition table that includes at least

20   data representative of each of the data record fields.

48.   The system of Claim 47, wherein the structure section further comprises one or more return type tables, each return type table including data representative of a format of each of the data record fields.

5   49.   A flight management system, comprising:

memory;

a navigation database stored in the memory, the navigation database compatible with multiple flight management systems and including:

a data section comprising a plurality of data tables, each data table including a

10   plurality of navigational data records that each have one or more features that affect its compatibility with one or more of the flight management systems, each data record including a feature field that contains one or more feature bits representative of each of its features, and

a structure section comprising a plurality of feature mask tables, each feature

15   mask table including data a feature mask record for each of the flight management systems that use one or more of the data tables that include the navigational data records having one or more features, each feature mask record including one or more feature mask values that indicate whether the one or more features of a navigational data record are compatible with one or more of the flight management systems, and thereby indicate

20   whether the data record is compatible with one or more of the flight management systems; and

a processor configured to generate an aircraft flight plan based at least in part on the navigational data stored in the navigation database.

XI. <u>EVIDENCE APPENDIX</u>

No evidence pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132 has been entered by

the Examiner or relied upon by Appellant in the instant appeal beyond that which is

already contained in the as-filed application, as is delineated in the Arguments section of

5   this Brief.

XII. RELATED PROCEEDINGS APPENDIX

As there are no related appeals and interferences, there are also no decisions rendered by a court or the Board of Patent Appeals and Interferences that are related to the instant appeal.